

Nomens gronovii.  
 Serranus trifurcus.\*  
 Stenotomus caprinus.  
 Diabasis aurolineatus.  
 Apogon maculatus.  
 Apogon alutus.  
 Mullus barbatus auratus.  
 Menticirrus nebulosus.\*  
 Chromis insolatus.  
 Chromis enchrysurus.  
 Platyglossus caudalis.  
 Platyglossus florealis.  
 Astroscopus anoplus.\*  
 Opisthognathus louchurus.  
 Porichthys plectrodon.

*Gobiesox virgatulus.*  
*Gobius boleosoma.*  
*Ioglossus calliurus.*  
*Chasmodes saburra.*  
*Isesthes ionthas.*  
*Isesthes scrutator.*  
*Blennius stearnsi.*  
*Genypterus omostigma.*  
*Ophidium graëllsi.*  
*Paralichthys albigitta.*  
*Paralichthys squamilentus.*  
*Hemirhombus pætulus.*  
*Etropus crossotus.*  
*Aphoristia plagiusa.*

INDIANA UNIVERSITY, May 15, 1882.

**A REVIEW OF THE SYNGNATHINE OF THE UNITED STATES, WITH  
 A DESCRIPTION OF ONE NEW SPECIES**

**By JOSEPH SWAIN.**

The number of species of Pipe-fishes on our coasts has been uncertain, owing to the fact that the fishes have not been carefully studied in large collections from their various localities. The writer has endeavored to go over the group critically, to ascertain the number of species and to find the limit of variation in the characters of each species. Nearly all the specimens studied by me have been collected by Professors D. S. Jordan and C. H. Gilbert; some of them belong to the United States National Museum, the others to the museum of Indiana University.

The writer wishes to express his great obligations to Professor Jordan for the use of his collection and library, and for many valuable suggestions.

ANALYSIS OF SPECIES.

a. Top of head strongly carinated.

b. Breast shields not covered by soft skin; lower jaw slightly included; opercle with a prominent ridge; snout short; D. 23, covering 1+4 rings; rings 18+30; belly concave; twelve irregular brown cross-bands on body (*Corythoichthys* Kaup) ..... ZATROPIS, 1.

bb. Breast shields covered by soft skin; lower jaw included; D. 41; rings 19+39. (*Dermatostethus* Gill)..... PUNCTIPINNE, 2.

- aa. Top of head with a slight carination, or with none; opercle without prominent longitudinal ridge. (*Siphostoma*.)
- c. Dorsal fin covering 1+9 rings; snout usually long.
- d. Rings 20 to 21+45 to 49; D. 39 to 46; top of head without keel; large, reaching a length of 18 inches.....CALIFORNIENSE, 3.
- dd. Rings 18 to 19+39 to 42; D. 36-41; top of head slightly keeled.  
GRISEOLINEATUM, 4.
- cc. Dorsal fin covering 1+7 (sometimes 1+6) rings.
- e. Rings 15+38; D. 29 to 30; top of head distinctly keeled; snout short.  
AULISCUS, 5.
- ee. Rings 16 to 19 before vent.
- f. Dorsal fin low, not longer than head.
- g. Rings 18+31; D. 34; snout short; body comparatively stout; tail short.  
BAIRDIANUM, 6.
- gg. Rings 17 to 19+36 to 41; D. 30 to 32; snout moderate, or rather short; body slender.....LEPTORHYNCHUM, 7.
- ggg. Rings 17 to 18+31 to 32; D. 27; snout rather long.....FLORIDE, 8.
- ff. Dorsal fin very high, not shorter than head; rings 16+30 to 33; D. 28 to 32; belly in female with black carina; snout rather short; sides of body with narrow vertical silvery streaks in life; dorsal spotted...AFFINE, 9.
- ccc. Dorsal fin covering 3+5 rings; rings 20 to 21+36 to 38; D. 32 to 37; belly flat or slightly concave; snout moderate.....LOUISIANE, 10.
- cccc. Dorsal fin covering 5+4 or 4+5 rings; rings 18 to 20+36 to 40; D. 36 to 40; snout moderate.....FUSCUM, 11.

## 1. *Siphostoma zatropis* J. & G.

??*Corythoichthys albivostis* Kaup. Lophobr. p. 25 (Bahia, Mexico).

*Syngnathus albivostis* Günther, Cat. Fish. Brit. Mus. viii, 170, 1870 (Mexico).

*Siphostoma zatropis* J. & G. Proc. U. S. Nat. Mus. 1882 (Pensacola).

Head 9 in total length; D. 23; rings 18+30.

Body robust. Snout short,  $2\frac{2}{3}$  in head; a strong median ridge above on snout, two ridges below with a median groove, and on each side of the groove is a horizontal ridge running to lower part of orbit. Occiput and nuchal plates very sharply carinated; opercle with two horizontal ridges. Belly somewhat concave, little keeled. Dorsal much shorter than head, covering 1+4 rings. Caudal well developed,  $1\frac{3}{4}$  in base of dorsal. Tail longer than rest of body,  $1\frac{3}{4}$  in total length.

Color in spirits light olivaceous, with about twelve irregular brown cross-bands, each covering from two to three rings; snout light, with two or three narrow cross-bands below; rest of head dusky.

*Habitat*.—Atlantic coast of America, Pensacola; Mexico.

Described from the original type, a specimen,  $5\frac{2}{3}$  inches in length, obtained by Prof. D. S. Jordan from the "Snapper Banks," near Pensacola, Fla.

## 2. *Siphostoma punctipinne* (Gill) J. & G.

*Dermatostethus punctipinnis* Gill, Proc. Acad. Nat. Sci. Phila. 1862, 283 (San Diego, Cal.).

*Siphostoma punctipinne* J. & G. Proc. U. S. Nat. Mus. 1880, 353, (name only); J. & G. Proc. U. S. Nat. Mus. 1881, 69; J. & G. Synopsis Fishes North America, 385, 1882.

Head 8 in total length; D. 41; rings 19+39; length 12 inches.

Body comparatively robust. Snout moderate. Occiput with a raised keel; joint between the occiput and the first dorsal shield more perfect than usual, so that the head can be placed at an angle with the body. Greatest depth about equal to length of post-orbital part of head. Skin on breast and anterior ventral plates thin, showing the striations of the bones. Tail twice as long as trunk. Only the original types are known.

*Habitat*.—Pacific coast of the United States: San Diego, Cal.

3. *Siphostoma californiense* (Storer) J. & G.

*Syngnathus californiensis* Storer, Proc. Bost. Soc. Nat. Hist. ii, 73, 1845 (California); Storer, Synopsis Fishes of North America, 524, 1846 (California); Gill, Proc. Acad. Nat. Sci. Phila. 1862, 283 (California). Dumeril Hist. Nat. Priss. ii, 1870, 566.

*Siphostoma californiensis* Jor. & Gilb. Proceed. U. S. Nat. Mus. 453, 1880; J. & G. Proceed. U. S. Nat. Mus. 1, 69, 1881 (common south of San Francisco); J. & G. Synopsis Fishes North America, 384, 1882 (Pacific coast).

Head  $6\frac{1}{6}$  to  $8\frac{1}{2}$  in total length; D. 39-46; rings 20-21 + 47-49.

Trunk robust. Snout very long,  $1\frac{1}{2}$  to  $1\frac{4}{5}$  in head, with median ridge above and below. Occiput and nuchal plates not carinated in adults. Dorsal shorter than head, covering 1+9 rings. Distance to dorsal  $2\frac{3}{4}$  in length. Pectorals as long as high, equaling in length the diameter of eye. Caudal pouch of males covering 21 to 25 rings, its length 3 in total.

Color in life "olivaceous, varying to brownish red, yellowish below; head and body variously marbled and speckled with whitish, the marking posteriorly taking the form of short horizontal grayish streaks, especially distinct on the top of the head; anteriorly often forming narrow bars." (*Jordan*.) This is much larger than the other American species, reaching a length of  $18\frac{1}{2}$  inches. Described here from specimens taken at Santa Barbara and Monterey.

TABLE.

	Rings.	D. rays.	Snout in head.
1.....	20 + 49	43	$1\frac{1}{2}$
2.....	21 - 47	45	$1\frac{1}{2}$
3.....	20 - 47	43	$1\frac{1}{2}$
4.....	21 - 49	46	$1\frac{1}{2}$
5.....	21 - 49	43	$1\frac{1}{2}$
6.....	20 + 47	43	$1\frac{1}{2}$
7.....	20 - 45	39	$1\frac{1}{2}$
8.....	21 - 49	43	$1\frac{1}{2}$
9.....	21 + 48	46	$1\frac{1}{2}$

The length of the snout is of but little value for specific distinction. Professor Jordan found specimens of *S. californiense*, at Santa Barbara and Monterey, with the snout no longer than the rest of the head.

As is usual in this group the females differ from the males, in a more robust trunk, in a longer snout, and in a greater keel on belly. These differences are not very constant.

*Habitat*.—Pacific coast of the United States; common south of San Francisco.

4. *Siphostoma griseolineatum* (Ayres) J. & G.

*Syngnathus griseolineatus* Ayres. Proc. Cal. Acad. Nat. Sci. 14, 1854 (San Francisco Bay); Gill, Proc. Acad. Nat. Sci. Phila. 1862, 284 (San Francisco, Tomales Bay, Fort Umpqua); Günther, Cat. Fish. viii, 160, 1870 (Vancouver's Island, California).

*Siphostoma griseolineatum* J. & G. Proc. U. S. Nat. Mus. 69, 1881 (San Francisco to Puget Sound); J. & G. Syn. Fish. South America, 384, 1882).

*Syngnathus abboti* Girard, U. S. Pac. R. R. Surv. Fish. 346, 1858 (San Francisco), Duméril l. c. 567.

*Syngnathus californiensis* Girard, U. S. Pac. R. R. Surv. Fish. 344, 1858 (Tomales Bay, San Francisco. Monterey). (Not of Storer.)

D. 36 to 41; rings 18 to 19+39 to 42.

*S. griseolineatum* is closely allied to *californiense*, but it differs in a somewhat shorter snout, in the number of D. rays, in the number of rings, in its size, in the snout being slightly more keeled, and in the dorsal covering 0-1+9 rings.

TABLE.

	Rings.	D. rays.	Snout in head.	Length.
				<i>Inches.</i>
1.....	18-42	41	1 $\frac{3}{4}$	6
2.....	18-39	37	1 $\frac{3}{4}$	6 $\frac{1}{2}$
3.....	19+42	37	1 $\frac{3}{4}$	6 $\frac{1}{2}$
4.....	19+42	37	1 $\frac{3}{4}$	5 $\frac{1}{2}$
5.....	18-42	37	1 $\frac{3}{4}$	11
6.....	18+42	36	1 $\frac{3}{4}$	10

*Habitat.*—Pacific coast of the United States; Puget Sound, Fort Umpqua, Tomales, San Francisco. Monterey.

5. *Siphostoma auliscus* sp. nov.

*Siphostoma dimidiatum* J. & G. Proc. U. S. Nat. Mus. 453, 1880 (Santa Barbara, San Diego) (not *Syngnathus dimidiatus* Gill); J. & G. Synopsis Fishes North America (coast of California, chiefly south of Point Concepcion); Rosa Smith, San Diego Free Press, Nov. 5, 1880.

Head 9-9 $\frac{1}{4}$  in total length; D. 29-30; rings 15+37-38.

Trunk rather slender. Snout 2 in head, median ridge above distinct, below comparatively broad and blunt. Occiput and nuchal plates sharply carinated; belly weakly keeled. Opercle slightly keeled, very convex, making the head slightly broader than deep. Dorsal little longer than head, covering 1+7 rings. Pectorals scarcely higher than long, slightly exceeding diameter of eye. Tail longer than rest of body, 1 $\frac{3}{5}$  in total length. Caudal pouch covering 21 rings. Color in spirits somewhat lighter than *S. californiense*, scarcely mottled or marbled.

TABLE.

	Rings.	D. rays.	Snout in head.	Head in body.	Length.
					<i>Inches.</i>
1.....	15-38	30	2	9 $\frac{1}{4}$	6
2.....	15-37	29	2	9	4 $\frac{1}{4}$

*Habitat.*—Pacific coast of the United States; San Diego, Santa Barbara.

6. *Siphostoma bairdianum* (Duméril) Swain. (31273.)

?*Syngnathus bairdianus* Duméril, Hist. Nat. Poiss. ii, 574, 1870 (coast of Mexico, near California).

Body unusually stout, with short head, short snout, and short tail, the general appearance being much like *S. californiense*, but all the parts contracted. Snout short, compressed, just as long as the rest of the head ( $\sigma$ ), its upper edge with a sharp, low keel, which is higher than in *S. californiense*. Top of head without keel. Opercle striate, with trace of a keel at base.

Keels of body not very sharp, the interspaces between the angles scarcely concave. Lateral line not continuous with the upper edge of the tail. Belly with a slight median keel. Dorsal fin low.

Rings 18+31. Dorsal rays 34, the fin inserted on 1+7 rings. Ten rings on the tail behind the caudal pouch. Head  $7\frac{2}{3}$  in length; base of dorsal equal to head. Distance from snout to dorsal  $2\frac{1}{3}$  in length; caudal pouch  $2\frac{2}{3}$  in length of body; tail behind caudal pouch 6 times.

Color blackish, with fine pale vermiculations; top of head and neck with wavy longitudinal streaks; caudal dusky; dorsal somewhat mottled; a dusky blotch before eye.

A single male example, 9 inches long, was obtained by Mr. Andrea Laro at Santa Barbara, and is now in the National Museum. The caudal pouch in this specimen is full of eggs.

This species seems most nearly allied to *S. californiense*, differing in the stouter form, much shorter tail and snout, and in the smaller number of rings and of dorsal rays.

It agrees fairly with M. Duméril's account of *Syngnathus bairdianus*, the only discrepancy of importance being the statement that the dorsal covers 3+6 rings. The numbers of rings (17+31) and of dorsal rays (30), as given by M. Duméril, agree very closely with the specimen from Santa Barbara.

*Habitat*.—Coast of Southern California; Santa Barbara; Lower California.

7. *Siphostoma leptorhynchum* (Girard) J. & G.

*Syngnathus leptorhynchus* Girard, Proc. Acad. Nat. Sci. Phila. vii, 156, 1854; Girard, U. S. Pac. R. R. Surv. Fish. 345, 1858 (San Diego); Gill, Proc. Acad. Nat. Sci. Phila. 1862, 284 (San Diego). Duméril l. c. 567.

*Siphostoma leptorhynchus* J. & G. Proc. U. S. Nat. Mus. 23 and 453, 1880 (San Diego); Rosa Smith, San Diego Free Press, Nov. 5, 1880 (San Diego); J. & G. Proc. U. S. Nat. Mus. 1-69, 1871 (Santa Barbara to San Diego). J. & G. Synopsis Fishes North America, 384.

*Syngnathus breirostris* Girard, Proc. Acad. Nat. Sci. Phila. vii, 156, 1854; Girard, U. S. Pac. R. R. Surv. Fish. 345, 1858 (San Diego).

*Syngnathus arundinaceus* Girard, U. S. Pac. R. R. Surv. Fish. 346, 1858 (coast of California); Gill, Proc. Acad. Nat. Sci. Phila. 1862, 284; J. & G. Proc. U. S. Nat. Mus. 23, 1880 (name only). Duméril l. c. 567.

*Syngnathus dimidiatus* Gill, Proc. Acad. Nat. Sci. Phila. 1862, 284 (San Diego); Günther, Cat. Fish. Brit. Mus. 165, 1870. Duméril l. c. 566.

Head  $6\frac{1}{4}$  to  $8\frac{1}{4}$  in total length; D. 30 to 32; rings 17 to 19+36 to 41. Snout  $1\frac{2}{3}$  to 2 in head; median line of snout above carinate; occiput and nuchal plates weakly keeled in young, the keels apparently disappearing in adults. Angle of belly less acute than in *S. californiense*; the keel sometimes wanting. Dorsal fin shorter than head, covering 1+7 rings; caudal pouch covering about 19 rings. Otherwise essentially as in *S. californiense*.

TABLE.

	Rings.	D. rays.	Snout in head.	Head in length.	Length.
1	18+40	30	$1\frac{2}{3}$	$6\frac{1}{4}$	<i>Inches.</i> 5
2	19-38	31	2	$7\frac{1}{8}$	$6\frac{1}{2}$
3	18-38	31	$1\frac{2}{3}$	$7\frac{1}{8}$	8
4	18-39	32	$1\frac{2}{3}$	$7\frac{1}{8}$	$5\frac{1}{2}$
5	17+38	30	$1\frac{2}{3}$	$7\frac{1}{8}$	$5\frac{1}{2}$
6	18-41	31	2	$8\frac{1}{4}$	$4\frac{1}{2}$
7	18+37	30	$1\frac{2}{3}$	$7\frac{1}{4}$	5
8	17+36	..	$1\frac{2}{3}$	$7\frac{1}{4}$	$3\frac{1}{2}$

*Habitat*.—Pacific coast of the United States, San Diego, Santa Barbara.

**8. *Siphostoma floridæ* J. & G.**

? *Syngnathus louisiana* Goode & Bean, Proc. U. S. Nat. Mus. 333, 1879 (San Marco Island). (Not. of Günther.)

*Siphostoma floridæ* J. & G. Proc. U. S. Nat. Mus. 1882 (Pensacola; Beaufort).

Head 6 to  $6\frac{1}{2}$  in total length; D. 27; rings 17 to 18+31 to 32.

Snout rather short, about  $1\frac{2}{3}$  in head; median line well keeled above and below, the ridge on both sides of median ridges above and below not so conspicuous. Occiput and opercle little keeled. Dorsal shorter than head, covering 1+6 to 7 rings, its height 5 times in its base. Caudal fin  $2\frac{1}{2}$  in base of dorsal. Pectoral slightly higher than length of its base. Tail longer than trunk,  $1\frac{5}{6}$  in total length, caudal pouch covering about 18 rings.

“Color in life, dark green; tail with faint darker bars, broader than the interspaces. Sides of tail, especially mesially, with many rough and oblong pale spots. Snout mottled, especially on side. Lower part of opercle nearly plain. Dorsal translucent, yellowish at base. Caudal yellow, dusky at tip. Anal plain.” (*Jordan*.)

Here described from specimens from Beaufort, N. C., and from Pensacola, Fla.

TABLE.

	Rings.	D. rays.	Snout in head.	Head in length.	Length.
1	18+32	27	1	$6\frac{1}{2}$	<i>Inches.</i> 6
2	17-31	27	1	6	6
3	17+32	27	1	6	6
4	17+33	27	1	$6\frac{1}{2}$	6
5	17+33	27	1	$6\frac{1}{2}$	$6\frac{1}{2}$
6	17+32	23	1	$6\frac{1}{2}$	$6\frac{1}{2}$

*Habitat.*—South Atlantic and Gulf coasts of the United States; Beaufort, N. C.; San Marco Island, Fla.; Pensacola, Fla.

9. *Siphostoma affine* (Günther) J. & G.

*Syngnathus affinis* Günther, Cat. Fishes Brit. Mus. viii, 163, 1870 (Louisiana.)

*Siphonostoma* sp. Jordan, Proc. U. S. Nat. Mus. 22, 1880 (Saint John's River, Fla.).

*Siphostoma affinis* J. & G. Synopsis Fishes North America, 383, 1882 (Saint John's River, Fla.); J. & G. Proc. U. S. Nat. Mus. 1882 (Pensacola, Fla.).

Trunk robust, very deep; width of adult females 2 in depth. Snout short, 2 to 2½ in head; median ridge well defined above and below; a less conspicuous ridge above on each side of median line, from end of snout to nostrils, thence running over interorbital and temples. Occiput, nuchal plates, and opercle keeled. Belly, in females, sharply carinated. Fins well developed. Height of dorsal, 3½ in its length; base of dorsal slightly longer than head, covering 3+4½-5 rings. Caudal, 2½ in base of dorsal.

Color in life, "deep olive green, varying to brown or blackish, or slightly reddish, according to surroundings; females with a black keel on the belly, which is obsolete in the male. Dark color of back forming about 15 dark cross-bars, very faint and much wider than the interspaces. Sides of head mottled, especially on lower half of opercles. Snout dark above, abruptly paler below. Dorsal high, having the dark color of the body with dark oblique shades, the paler color appearing like faint spots; vertical striæ on body plates, shining silvery, very distinct and bright in life. Caudal and anal colored like the dorsal, the latter conspicuous." (*Jordan.*)

Described from specimens taken at Pensacola, Fla.

TABLE.

	Rings.	D. rays.	Snout in head.	Head in length.	Length.
1.....	16+31	31	2 2½	8 8	4½
2.....	16+30	30	2 2½	7 8	4
3.....	16+30	31	2 2½	7 8	5
4.....	16+31	30	2 2½	8 8	2½
5.....	16+32	29	2 2½	8 8	3½
6.....	16+32	30	2 2½	8 8	4½
7.....	16+32	28	2 2½	8 8	4½
8.....	16+33	30	2 2½	8 8	4½
9.....	16+32	32	2 2½	8 8	5

*Habitat.*—South Atlantic and Gulf coasts of the United States: Saint John's River, Fla.; Pensacola, Fla.; Louisiana.

10. *Siphostoma louisianæ* (Günther) J. & G.

*Syngnathus louisianæ* Günther, Cat. Fish. viii, 160, 1870 (New Orleans).

*Siphonostoma louisianæ* Jordan, Proc. U. S. Nat. Mus. 1880, 22 (Beaufort, N. C.).

*Siphostoma louisianæ* J. & G. Synopsis Fishes North America, 383, 1882 (Beaufort, N. C.).

*Syngnathus fuscus* Duméril, Hist. Nat. Poiss. ii, 574 (Savannah).

Head 7 to  $7\frac{2}{3}$  in total length; D. 32 to 37; rings 20 to 21+36 to 38.

Trunk broader below. Snout moderate, about  $1\frac{2}{3}$  in head; median ridge above and below, a ridge on each side of median ridge above and below. Occiput, nuchal plates, and opercle somewhat keeled. Belly flat or slightly concave, with a median ridge. Dorsal fin well developed, shorter than head, covering 3+5 rings. Caudal longer than pectoral,  $2\frac{1}{2}$  in base of dorsal. Tail longer than trunk,  $1\frac{1}{3}$  in total length.

Color in spirits brownish, lighter on lower part of trunk and below; brown of the side extends in a band through eye to middle of snout. Here described from specimens from Beaufort, N. C.

TABLE.

	Rings.	D. rays.	Snout in head.	Head in length.	Length.
1.....	20+38	32	1	$7\frac{1}{2}$	Inches. 8
2.....	20+36	33	1	7	8
3.....	21+38	33	1	$7\frac{3}{8}$	5
4.....	21+38	.	1	$7\frac{3}{8}$	7
5.....	20+38	35	1	$7\frac{3}{8}$	7

*Habitat*.—Atlantic coast of the United States; Beaufort, N. C.; Savannah, Ga.; New Orleans, La.

#### 11. *Siphostoma fuscum* (Storer) J. & G.

"*Syngnathus typhle* Mitch. Trans. Lit. & Phil. i, 475, 1815." (Not of L.)

*Syngnathus fuscus* Storer, Report Fish. Mass. 162, 1839; De Kay, New York Fauna, 321, 1842 (coast of Mass.).

*Siphonostoma fuscum* J. & G. Proc. U. S. Nat. Mus. 1880, 22 (Wood's Holl. Mass.).

*Siphostoma fuscum* J. & G. Synopsis Fishes North America, 353, 1882 (Atlantic coast, northward).

*Syngnathus peckiannus* Storer, Report Fishes Mass. 163, 1839; De Kay, New York Fauna, 321, 1842 (coast of Mass.); Storer, Synopsis Fishes North America, 490, 1846 (Mass. Conn. New York); Gill, Can. Nat. Aug. 1865, 21 (Bay of Fundy); Günther, Cat. Fishes Brit. Mus. 157, 1870 (Atlantic coast U. S.); Uhler & Lugger, Report Fishes Maryland, 76, 1876 (St. Mary's River).

*Syngnathus fasciatus* De Kay, New York Fauna, 319, 1842, pl. 54, fig. 176 (New York).

*Syngnathus viridescens* De Kay, New York Fauna, 321, 1842, pl. 54, fig. 176 (New York); Duméril, Hist. Nat. Poiss. ii, 570 (Cape Cod).

*Syngnathus dekayi* Duméril, Hist. Nat. Poiss. ii, 569, 1870, (after *S. fasciatus* Dek.).

*Syngnathus milbertianus* Duméril, Hist. Nat. Poiss. ii, 570, New York.

Head  $7\frac{1}{2}$  to 9 in total length; D. 36 to 40; rings 18 to 20+36 to 40.

Snout short, about 2 in head; median line above and below well keeled, the ridge on each side of median ridges rather conspicuous. Occiput, nuchal plates, and opercle carinate, belly somewhat convex, scarcely keeled. Dorsal longer than head, covering 4-5+5-4 rings, its height 5-6 in length of its base. Tail much longer than trunk,  $1\frac{2}{3}$  in total length.



Color in spirits, olivaceous or brownish, lighter below, especially on belly, lower half of opercles, and snout; sides mottled and blotched much as in other species.

TABLE.

*Specimens from Wood's Holl, Mass.*

	Rings.	D. rays.	Snout in head.	Head in length.	Rings covered by dorsal.	Length.
1.....	18-36	36	2	8 $\frac{2}{3}$	4 +5	<i>Inches.</i> 5
2.....	19-38	49	2	7 $\frac{1}{2}$	5 +5	4 $\frac{1}{2}$
3.....	18-36	36	2	7 $\frac{1}{2}$	4 +5	4 $\frac{1}{2}$
4.....	19-40	39	2	9	4 $\frac{1}{2}$ +5	4 $\frac{1}{2}$
5.....	19-38	38	2	8 $\frac{1}{2}$	5 +4	7 $\frac{1}{2}$
6.....	20-43	35	1 $\frac{1}{2}$	7 $\frac{1}{2}$	5 +4	7 $\frac{1}{2}$
7.....	19-37	(?)	2 $\frac{1}{2}$	7 $\frac{1}{2}$	5 +5	3 $\frac{1}{2}$

*Catalogue of nominal species, with identifications.*

Nominal species.	Date.	Identification.
<i>Synagathus fuscum</i> Storer.....	1839	<i>Siphostoma fuscum</i> .
<i>Synagathus peckianus</i> Storer.....	1839	<i>Siphostoma fuscum</i> .
<i>Synagathus fasciatus</i> De Kay.....	1842	<i>Siphostoma fuscum</i> .
<i>Synagathus viridescens</i> De Kay.....	1842	<i>Siphostoma fuscum</i> .
<i>Synagathus californiensis</i> Storer.....	1845	<i>Siphostoma californiense</i> .
<i>Synagathus griseolineatus</i> Ayres.....	1854	<i>Siphostoma griseolineatum</i> .
<i>Synagathus leptorhynchus</i> Girard.....	1854	<i>Siphostoma leptorhynchum</i> .
<i>Synagathus brevirostris</i> Girard.....	1854	<i>Siphostoma leptorhynchum</i> .
<i>Synagathus abbotti</i> Girard.....	1858	<i>Siphostoma griseolineatum</i> .
<i>Synagathus arundinaceus</i> Girard.....	1858	<i>Siphostoma leptorhynchum</i> .
<i>Dermatostethus punctipinnis</i> Gill.....	1862	<i>Siphostoma punctipinne</i> .
<i>Synagathus dimidiatus</i> Gill.....	1862	<i>Siphostoma leptorhynchum</i> .
<i>Synagathus affinis</i> Günther.....	1870	<i>Siphostoma affine</i> .
<i>Synagathus louisianae</i> Günther.....	1870	<i>Siphostoma louisiana</i> .
<i>Synagathus dekayi</i> Duméril.....	1870	<i>Siphostoma fuscum</i> .
<i>Synagathus milbertianus</i> Duméril.....	1870	<i>Siphostoma fuscum</i> .
<i>Synagathus bairdianus</i> Duméril.....	1870	<i>Siphostoma bairdianus</i> .
<i>Siphostoma zatropis</i> Jor. & Gilb.....	1882	<i>Siphostoma zatropis</i> .
<i>Siphostoma floride</i> J. & G.....	1882	<i>Siphostoma floride</i> .
<i>Siphostoma auliscus</i> Swains.....	1882	<i>Siphostoma auliscus</i> .

*Habitat*.—Atlantic coast of the United States, Cape Cod to Virginia; Wood's Holl, Massachusetts; Connecticut; New York; Saint Mary's River, Maryland.

INDIANA UNIVERSITY, May 16, 1882.

**NOTICE OF RECENT ADDITIONS TO THE MARINE INVERTEBRATA OF THE NORTHEASTERN COAST OF AMERICA, WITH DESCRIPTIONS OF NEW GENERA AND SPECIES AND CRITICAL REMARKS ON OTHERS.**

PART IV.—ADDITIONS TO THE DEEP-WATER MOLLUSCA, TAKEN OFF MARTHA'S VINEYARD, IN 1880 AND 1881.

By A. E. VERRILL.

The following article contains the species of Mollusca that have been added to our deep-water fauna since the publication of my former article on the same subject in these Proceedings (vol. iii, p. 356). This is